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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/893,917	07/11/1997	KARL A. LITTAU	AM2119/T2130	8435
57385 7590 01/29/2007 TOWNSEND AND TOWNSEND AND CREW LLP / AMAT TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER ZERVIGON, RUDY	
			ART UNIT	PAPER NUMBER
			1763	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/29/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

08/893,917

Applicant(s)

LITTAU ET AL.

Examiner

Rudy Zervigon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-20 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims 16-20 drawn to an invention nonelected with traverse in Paper No. March 3, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 22-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Shang; Quanyuan et al. (US 5788778 A). Shang teaches a method (column 4, lines 23-63; column 6, lines 13-23) of removing residue from a substrate processing chamber (10; Figure 1; column 4, lines 4-15), said method (column 4, lines 23-63; column 6, lines 13-23) comprising the steps of: forming a plasma remotely (46; Figure 1; column 4, lines 40-53) with respect to said chamber (10; Figure 1; column 4, lines 4-15), said plasma including a plurality of reactive radicals; forming a flow of said reactive radicals traversing toward said chamber (10; Figure 1; column 4, lines 4-15); forming a nonplasma (32,34; Figure 1; column 4, lines 23-31) diluent gas flow; mixing said flow of said reactive radicals and said diluent gas flow at a mixing location ("T" location at 31) downstream of a location (where "57" is detailed) of forming said flow of said reactive radicals and anterior to said chamber (10; Figure 1; column 4, lines 4-15) to form a gas-radical mixture; and flowing said gas-radical mixture into said chamber (10; Figure 1; column 4, lines 4-15), as claimed by claim 22

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Shang further teaches:

- i. The method (column 4, lines 23-63; column 6, lines 13-23) as recited in claim 22 wherein said flow of reactive radicals and said gas flow are established to maintain a pressure within said chamber (10; Figure 1; column 4, lines 4-15) below one torr (column 5, lines 8-13), as claimed by claim 23
- ii. The method (column 4, lines 23-63; column 6, lines 13-23) as recited in claim 22 wherein said reactive radicals comprise atoms associated with a reactive gas, with said reactive gas being selected from a group consisting of NF_3 (column 5, lines 8-13), dilute F_2 , CF_4 , C_2F_6 , C_3F_8 , SF_6 , and ClF_3 , as claimed by claim 24
- iii. The method (column 4, lines 23-63; column 6, lines 13-23) as recited in claim 22 wherein said diluent gas flow comprises an inert gas (column 5, lines 1-5), as claimed by claim 25
- iv. The method (column 4, lines 23-63; column 6, lines 13-23) as recited in claim 22 wherein said diluent gas flow comprises a reduction gas (assumed to be a reducing gas - hydrogen; column 5, lines 1-5), as claimed by claim 26
- v. The method (column 4, lines 23-63; column 6, lines 13-23) as recited in claim 22 wherein said chamber (10; Figure 1; column 4, lines 4-15) has components therein, with a subset of said radicals in said gas-radical mixture reacting with said components creating a residue (column 6, lines 13-23) and further including the step of exhausting said residue, with a rate at which said residue is exhausted depending upon a rate of said diluent gas flow, as claimed by claim 27

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shang; Quanyuan et al. (US 5788778 A). Shang is discussed above. Shang further teaches “user-selected flow rates” (column 4, lines 53-63). Shang does not teach the method (column 4, lines 23-63; column 6, lines 13-23; column 6, lines 32-39) as recited in claim 22 wherein said diluent gas flow travels at a first rate and said flow of said reactive radicals travel at a second rate with a ratio of said first rate to said second rate being at least 2:1, as claimed by claim 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the relative flow rates of Shang’s gas sources.

Motivation to optimize the relative flow rates of Shang’s gas sources is for “achieve optimum of performance for a particular system” as taught by Shang (column 6, lines 32-39). It would be obvious to those of ordinary skill in the art to optimize the operation of the claimed invention (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), MPEP 2144.05).

Response to Arguments

6. Applicant's arguments filed November 17, 2006 have been fully considered but they are not persuasive.

7. Applicant states:

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The gas supplies 32 are disclosed as "containing the gases that are used during deposition" (Shang, Col. 4, 11.21 - 22) and are distinguished from a "second gas supply system [that] supplies gas that is used to clean the inside of the chamber after a sequence of deposition runs" (id., Col. 4, 11.33 - 35).

“

In response, the Examiner notes that nowhere in Applicant's claims is there any reference to a "second gas supply system", that said supply system supplies "gas that is used to clean".

8. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "second gas supply", and "used to clean") are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant states:

“

The only disclosure of a diluent gas flow in Shang appears to be the disclosure of an optional "source of a minor carrier gas 52 that is connected to the remote activation chamber through another valve and flow control mechanism 53" (id., Col. 4, 11.64 - 66). When used, such a flow is mixed with reactive radicals in remote activation chamber 46, not "at a mixing location downstream of a location of forming said flow of said reactive radicals" as recited in Claim 22. A definition of "diluent gas" is provided in the application at p. 21, 11. 16 - 27.

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In response, it is well established that claim terms are issued their “plain meaning” according to MPEP 2111.01: Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art. *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir. 2003). Applicant’s specification definition cannot be read into the claims. Specifically, that Shang forms a nonplasma (32,34; Figure 1; column 4, lines 23-31) diluent gas flow is evident from the two gases (32; “Gas” x 2; Figure 1) of Shang that from the claimed diluent gas flow. Applicant appears to believe that the plasma and non-plasma gas of Shang are mixed at “remote activation chamber 46”. This is completely wrong. Shang clearly shows mixing said flow of said reactive radicals (in pipe 57, down stream of remote plasma chamber 46) and said diluent gas flow (32; “Gas” x 2; Figure 1) at a mixing location (“T” location at 31) downstream of a location (where “57” is detailed) of forming said flow of said reactive radicals and anterior to said chamber (10; Figure 1; column 4, lines 4-15) to form a gas-radical mixture; and flowing said gas-radical mixture into said chamber (10; Figure 1; column 4, lines 4-15), as claimed by claim 22

Conclusion

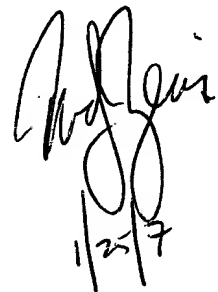
9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (571) 273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272-1435.



1/25/7